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Real estate is among the most highly leveraged sectors of an economy, which makes it more likely than others to precipitate a financial crisis. Compounding the problem is the tendency of real estate to over-shoot during boom periods, producing a real estate bubble. Once pricked, it results in large price declines. This happened in some Asian countries in the 1997-1998 Asian financial crisis. Declining real estate values led to loan losses which reduced liquidity in the affected economies. On the spending side, consumption was impacted due to wealth effects.

At the East Asian Seminar on Economics (EASE) of the National Bureau of Economic Research (NBER), held in June 2007 at Singapore Management University, Richard Green from George Washington University, Roberto S. Mariano from Singapore Management University, Andrey Pavlov from the University of Pennsylvania and Simon Fraser University, and Susan Wachter from the Wharton School, presented a joint paper, "Mortgage Securitisation in Asia: Gains and Barriers", suggesting that asset securitisation could help reduce risks. According to the authors, much of the risk to economies could be reduced through asset securitisation, which bundles home loans and sells them as a package, usually in various tranches from low to high risk. "This puts the pricing in the hands of a new group of owners who apply their financial motivation, expertise and background to keep the risk correctly priced," state the authors.

Country by Country Comparison

The role of real estate in the 1997-1998 Asian financial crisis varied from country to country. The problems as well as solutions to the crisis have been quite different among affected countries.

In four economies -- Korea, Taiwan, Hong Kong and Shanghai -- real estate didn't cause much of a problem because it didn't form a bubble that later burst. In Korea, for instance, banks are prohibited from making loans for real estate development. The real estate sector had also experienced a downturn just prior to the crisis, so it didn't enter the financial crisis with a fully-inflated housing bubble. The country's 1997-1998 crisis was caused more by its unique system of corporate lending to the country's large conglomerates.

In Taiwan, during this period, land prices rose and then stabilised. Property prices didn't crash, unlike in other Asian economies. This was partly due to the government successfully regulating the financial system. In Hong Kong, land prices fell during the financial crisis, but its lending rules require high equity funding. With leverage low, a credit bubble didn't form or burst. The decline in Hong Kong's real estate prices had relatively little impact on the rest of the economy. In the case of Shanghai, the office market became overbuilt but Shanghai's strong economy prevented a price collapse.

In three Asian economies, however, real estate prices did crash, exacerbating the financial crisis. Japan saw rising property prices from 1984 to 1991, partly as a result of a strong economy and scarcity of land. Poor commercial and residential real estate underwriting played a role in the price downturn. So did the practice of permitting the market value of real estate to be included in bank reserves. High leverage meant that a small downturn in values was enough to expose inadequate bank reserves. It even produced negative equity at some banks.

In Indonesia, the collapse in real estate was compounded by the currency collapse. Since many of the real estate sales were made in US dollars, the value of real estate fell with the collapse of the rupiah. At the same time, the currency fall meant that US dollar denominated debt became more expensive and harder for borrowers to service.

In Thailand, the collapse of its currency compounded the real estate decline. Foreign investment (especially Japanese) fled the country, which put severe pressure on the currency. Thailand was able to recover more quickly than other countries by seizing and selling distressed assets. While these sales often resulted in large losses to the government, they quickly brought liquidity back to the system. Thailand returned to a path of solid growth by 1999, ahead of other affected countries.

Looking outside Asia, the authors also discuss the U.S. savings and loan (S&L) crisis of the 1980s, caused in part by under-pricing as well as hiding risky loans. S&Ls were not required to mark down their real estate loans to current market prices. The bad loans remained hidden until defaults started. Depositors and other stakeholders had little incentive to investigate their S&Ls or require higher rates from S&Ls that made risky loans since the loans were guaranteed by the government. Depositors knew their money was safe regardless of the financial strength of the S&L.

"This resulted in a form of moral hazard, whereby S&Ls found they had an incentive to make high risk, high return loans," say the authors. "If the risky loans turned bad, losses would be paid by deposit guarantees from the

government. If they didn't, the high-yield loans became very profitable for the lending institution."

After the collapse, the Resolution Trust Corporation (RTC) purchased non-performing loans. It securitised them with mortgage-backed securities (MBS) and sold them to investors. In the process, the RTC absorbed substantial losses.

Under-priced Real Estate Loans

In their paper, the authors develop a model of how banks under-price their real estate loans, especially in strong economic times. The empirical data match the model and show that in boom periods, just before a real estate price collapse, lending risks increase. The lending rates, however, do not rise to match the increased risks, hence the under-pricing. The authors describe this as "the negative relationship between the change in lending spread and asset returns before the crash."

Of course, one explanation is that lenders did not see the collapse coming. Like everyone else, they were caught up in the euphoria of a booming economy and failed to notice that escalating real estate values produce higher lending risks. As such, they didn't perceive their loan rates as being too low. As the paper explains, "…the fundamental factor which explains why episodes of bank under-pricing of risks are likely to occur is the inability of banking shareholders to identify these episodes promptly…"

The authors advance the position that mortgage-backed securities would draw in a wider range of expertise, thereby increasing predictability of crisis events and leading to a more correct pricing of assets and risk. The mis-pricing is compounded if banks hide some of their losses, which has occurred mostly through accounting and loss recognition practices. The model assumes that "under loan securitisation, the bank cannot hide any losses, and both the real estate and the banking sectors are protected." This is because buyers and the market have full information about the quality of loans in the securitised portfolio.

According to the authors, "The major benefit of securitisation is the gains from trading on information and the increased transparency this could bring to the financial sector of Asian economies." While it can't hurt to have a few more eyeballs watching the data, there are instances where the entire market has been fooled. In these cases, there have been colossal mistakes in the pricing of risk.

U.S. Sub-prime Home Loans

Sub-prime home loans in the U.S. offer the most current data on securitising home loans. Has it been successful? Has the army of high-powered analysts evaluating the debt been able to price it correctly and prevent surprises? It is difficult to say. While there have been problems, one could argue that the pricing is more accurate than if these assets had been stuck in a bank's loan portfolio.

In recent months, yields in the sub-prime tranches of home loans for collateralised debt obligations (CDOs) have shot up, because foreclosures and defaults have been more than anticipated. Pricing turned out to be less than perfect because the risks were higher than anticipated. "Not only that," say the authors, "but the pricing of CDOs has turned out to be quite vague. Until CDOs default and are sold, there is no certainty about the market price of these assets."

So far, that has not happened. Great efforts are typically made to work out a settlement to avoid forced sales that would require re-pricing of defaulted CDOs. An example is two Bear Sterns hedge funds that specialised in CDOs: Enhanced Leverage and Credit Strategies. A forced sale by Merrill Lynch was narrowly avoided in June 2007. It probably would have triggered a broad re-pricing of mortgage-backed securities, leading to losses and margin calls across hedge funds.

In the absence of defaults, pricing mortgage-backed debt is even more difficult. For example, in April 2007, Bear Sterns wrote down the value of its Enhanced Leverage fund by 6.75%. Two weeks later, it put the losses at 18% even though nothing fundamental had changed in those two weeks. It opens a debate as to whether securitisation really makes it easier to correctly price risky assets. Even now, the dust has not settled. There is still a wide range of estimates as to the severity of the problem and the correct pricing for mortgage debt at various risk levels.

"Uncertainty is most acute in the high-risk equity tranches of CDOs, popularly known as 'toxic waste,'" write the authors. (In polite circles this risky debt is called "equity".) The experience of CDOs and sub-prime loans is that securitisation does not guarantee perfect information about loan losses.

According to Wachter, however, when mortgage securitisation makes use of standardised mortgage assets, better pricing and liquidity result. Such securitisation may do better than relying on regulators and shareholders to do risk assessments. Say the authors, "… regulators are still outsiders and unable to precisely observe the risk of the bank lending activities. Furthermore, our empirical evidence from the Asian financial crisis suggests that public ownership of bank equity does little to prevent risky and/or under-priced lending."

Conventional and New Solutions

According to co-author Pavlov, "Governments around the world have attempted three basic solutions to the

principal-agent conflict in bank lending: regulation of banks, public (rather than government) ownership of banks and mortgage securitisation."

A fourth, unregulated and non-government approach to pricing debt and transferring risk has been to sell insurance against loan defaults. Derivative markets do this. Credit default swaps are a large part of these derivatives. They have established a market for loan default insurance. By the end of last year, it had grown to an incredible US$20 trillion. In contrast, at the end of 2006, the CDO market was estimated at US$2 trillion. It is huge but the market for swaps still dominates. As such, it could be argued that derivatives are useful in providing information to help solve the risk-pricing problem.

At the moment, most Asian banks do neither. They are content to quietly hold onto their variable-rate home loans. The advantage is that it provides an easy way to match assets and liabilities. As the authors point out, "Mortgages being generated by banks are, for the most part, short-term adjustable rate instruments, perfect to hedge against interest rate increases when liabilities are, as is the case for banks, deposits." However borrowers are not protected against interest rate changes.

The authors cite Sing Tien Foo and Ong Seow Eng (2004) who call these short-term variable mortgages "golden geese -- one of the most lucrative and low-risk assets in the balance sheet of commercial banks and finance companies in Singapore." Bankers see no need for securitisation when the risk has already been transferred to the borrower via loans which are short-term and variable. It even applies to so-called fixed-rate home loans which are fixed for only three years, after which they also become variable. Not only are short-term mortgages less risky for the banks, they are highly profitable. They do not need to incur costs for hedging or securitisation.

It is a strong rationale for staying with old lending habits. Asian bankers might ask, "If it ain't broke, why fix it?

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